

Please add new claims 32-59 as set forth on the enclosed pages.

REMARKS

This patent application concerns a method of, and apparatus for, controlling a laser in a WDM application. The method comprises the following steps: first, establishing a predetermined laser temperature using temperature control means (e.g., a thermo-electric cooler); second, controlling the laser current to give a wavelength of operation substantially equal to a desired wavelength; and third, establishing a predetermined laser output power by means of a variable attenuation attenuator at the laser output. Two points to note are that the steps of the method are carried out in this order, and secondly, that the output power is controlled by means of a variable attenuation attenuator connected to the output of the laser. The laser temperature affects the wavelength of operation of the laser, and the current affects both the wavelength and the output power. It is thus important to firstly control the temperature of the laser before controlling the current to establish the desired operating wavelength. The use of an external attenuator enables the output power to be controlled without affecting the operating conditions of the laser which have already been established.

To more clearly define the scope of the present invention, the claims positively recite temperature control means and specifically require that the output power is controlled by a variable attenuation attenuator.

U.S. Patent No. 6,222,861 to Kuo, et al. teaches a method and apparatus for controlling the wavelength of a laser. To control the wavelength of operation of the laser,

a control loop is used to dither the wavelength of the carrier signal (wavelength of operation of the laser) from the laser. The carrier is then modulated (with data) in a normal manner using an external modulator 114. A proportion of the modulated carrier is filtered and detected. The amplitude and phase of the detected signal (i.e., at the dither frequency or at higher harmonics of the dither frequency) is averaged and summed with the dither signal and the composite signal used by the control loop to control the wavelength of operation of the laser (col. 4, lines 27-43).

Contrary to the Examiner's assertion, Kuo, et al. neither discloses nor teaches controlling the laser output power using an attenuator connected to the laser output. The only reference to controlling output power of the laser transmitter is in col. 3, lines 64-66, which states that the "*amplifier 118 increases the strength of the optical signal and provides the amplified signal at a predetermined power level as the output of the laser transmitter 100*". This reference thus teaches away from using an attenuator which attenuates (decreases) the output from the laser to control it to a predetermined power level. Col. 4, lines 20-26 of Kuo, et al. cited by the examiner as disclosing the use of an attenuator, is concerned with coarse tuning of the laser's wavelength of operation and, contrary to the Examiner's assertion, has nothing to do with controlling the output power of the laser or use of an attenuator to control power.

Accordingly, it is submitted that new independent claims 32, 47 and 53, each of which explicitly requires the laser power to be controlled by an attenuator connected to the output of the laser, are both novel and involve an inventive step over Kuo, et al. It is

further submitted that the dependent claims are novel and involve an inventive step by virtue of their dependence on the independent claims and by virtue of the additional features they recite.

In accordance with the applicant's ongoing duty of candor, enclosed is a copy of the Search Reports and documents cited therein in respect to United Kingdom Patent Application No. GB 9919047 from the priority application and in respect to United Kingdom Patent Application No. 0119855.5 which is a divisional application of the priority application. Also enclosed is Form PTO-1449 listing the documents.

Allowance of all claims is respectfully submitted.

The Rule 17(p) fee of \$180.00 is enclosed.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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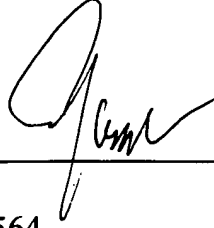
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